

now added to the venturi throat, namely Rx4 35 and Rx5 36. The cross sectional measurement can now be obtained by transmitting on Tx3 19 and receiving on Rx4 35 and Rx5 36.

Please delete the existing Abstract and add the following Abstract as a separate sheet:

ABSTRACT

Method and apparatus for determining the flow rates and/or composition of a fluid comprising a multi-component mixture of a gas and at least one liquid in a pipe comprises: electromagnetic loss and phase measurements are performed in at least two directions of the pipe; the degree of annular flow is determined based on the measurements of step a; the permittivity of the flow mixture is calculated based on the results from steps a and b, including corrections for the degree of annular flow; the mixture density is measured and compensated for the degree of annular flow; the temperature and pressure are obtained; the velocity of liquid and gas are determined, and based on the knowledge of densities and permittivities of the components of the fluid mixture, and the result from the above steps, the volume and mass flow rates of the gas and liquid(s) of the fluid mixture are calculated.